Orbit Ceiling Speaker
OCS1

Installation and Use Manual

54-2089-01B 0406

Product Description

Thank you for choosing NEAR® Orbit Loudspeakers. You have purchased one of the finest ceiling loudspeakers available today, the NEAR Model OCS1. Please familiarize yourself with this product by reading and reviewing the descriptions and diagrams in this manual.

All NEAR products include similar technical and design aspects that are unique to the market. NEAR invented and patented the "spiderless" woofer (MLS™), which features a high-gauss ferrofluid to guide the voice coil through the magnetic field. The benefits over conventional woofers with cloth spiders are several, including the ability to constantly adjust voice coil alignment, extend linear excursion, and the most efficient path for cooling the voice coil.

In addition, the use of metal-alloy cone structures provides several benefits over the usual paper or plastic cone, such as elimination of cone flex or "break-up" in the operating ranges, additional thermal path for the voice coil to stay cool, and an extremely stable cone structure unaffected by changes in temperature.

The NEAR OCS1 Ceiling Loudspeaker is a full-range, wide dispersion system providing high-quality background and foreground music. It can be installed in either suspended ceiling structures or hard surfaces such as sheetrock. It comes ready to install with integral swinging arm clamps. An optional mounting bracket (TBCR) is available for additional support (recommended for all suspended ceiling applications). The bracket can also be used for new construction ceilings, providing a cutout guide behind the sheetrock surface and as a C-ring to stiffen the edges of the cutout opening.

A variety of speaker power levels are easily selected via a front panel rotary switch. Settings for both 70V and 100V high-impedance systems, as well as a low-impedance (16-ohm) position, are provided.

The OCS1 features a removable snap-lock input connector, providing easy wire connection for input as well as loop-through to the next speaker.

IMPORTANT

The OCS1 is not an outdoor speaker. Do not expose the speaker to rain or moisture. The OCS1 should be installed by qualified personnel.

Product Diagrams

OCS1 Front Drawing *(grille removed)*

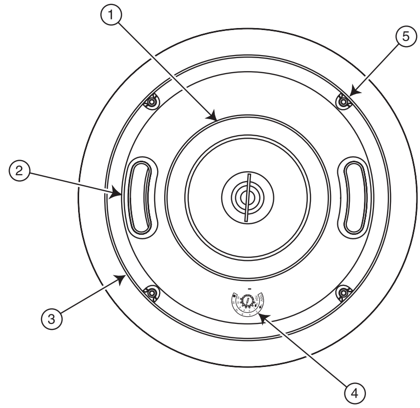
1. Coaxial Driver Assembly

2. Bass Tuning Vents (x2)

3. Grille Retention Groove

4. Power Tap Selection Switch

5. Mounting Clamp Screws (x4)



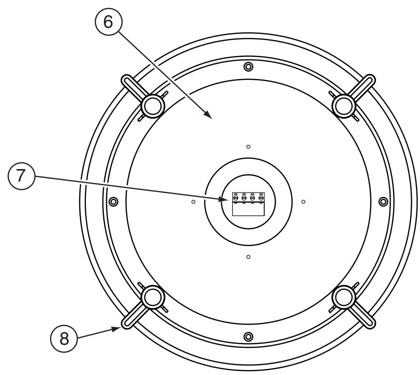
OCS1 Front Drawing
(grille removed)

OCS1 Rear Drawing

6. Metal Back Can

7. Snap-Lock Input Connector

8. Mounting Clamps (x4)



OCS1 Rear Drawing

OCS1 Rear Drawing *(terminal cover)*

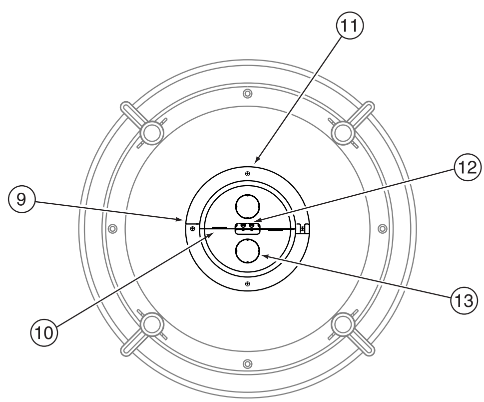
9. Terminal Covers (2 identical halves)

10. Eyelets (x2)

11. Mounting Screws (x4)

12. Wire Exit Slot

13. Conduit Knock Out (x2)



OCS1 Rear Drawing
(terminal cover)

Installation

The OCS1 can be installed in a variety of ceiling environments. The use of the TBCR (Tile Bridge Support Ring) accessory may be desired for many of these environments.

For suspended ceilings, the use of a TBCR is strongly recommended to help support and distribute the weight of the speaker.

In new construction installations, the TBCR, installed before sheetrock, acts as a routing template that ensures an accurate and neat hole for installation. The TBCR can also be used as a support ring in retrofit applications to better distribute the speaker's clamping forces.

IMPORTANT

- There must be a minimum of 11" of vertical clearance between the FRONT of the mounting surface and any other structure for the speaker to fit. Before cutting the full hole, use a smaller exploratory hole to determine if there are any obstructions.
- The edge of the hole must be a minimum of 1-¼" away from any side obstructions to ensure that they will not interfere with the action of the clamps.

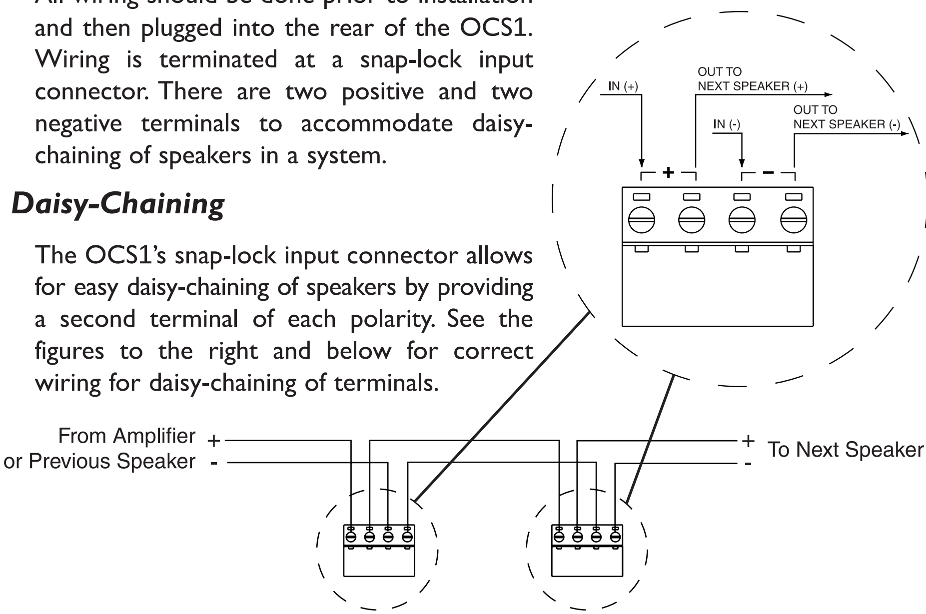
1. Begin by cutting a 10-¾" circular hole where the OCS1 will be installed. If using a TBCR, then follow its installation instructions for the specific type of environment the OCS1 is being installed in.
2. Make electrical connections to the pluggable terminal strip and plug it onto the OCS1. See *Speaker Wiring* section.
3. Install terminal cover plates, if necessary or desired, using 4 screws. See the *Terminal Covers* section if using conduit or if it is required to secure the speaker directly to the structure (typically for suspended ceilings).
4. Remove the speaker's grille. See *Speaker Grille Installation & Removal* section.
5. Set the power level using the rotary selector switch on the front panel. Refer to the *Selecting Power Levels* section for instructions on selecting the power level.
6. Position the swing-out clamps so that they are against the body of the speaker and insert the speaker into its opening in the ceiling.
7. Tighten the clamps by turning the clamping screws clockwise. Do not over-tighten the clamps - only tighten until the speaker is fairly snug in the mounting hole. If using an electric driver, set the clutch on the driver to the lowest setting.
8. Re-install the speaker's grille. See *Speaker Grille Installation & Removal* section.

Speaker Wiring

All wiring should be done prior to installation and then plugged into the rear of the OCS1. Wiring is terminated at a snap-lock input connector. There are two positive and two negative terminals to accommodate daisy-chaining of speakers in a system.

Daisy-Chaining

The OCS1's snap-lock input connector allows for easy daisy-chaining of speakers by providing a second terminal of each polarity. See the figures to the right and below for correct wiring for daisy-chaining of terminals.



Speaker Phasing

Keep the same polarity terminals wired together to ensure correct phasing. In order to provide the best possible sound, all of the speakers in a system need to be pushing out and pulling in at the same time.

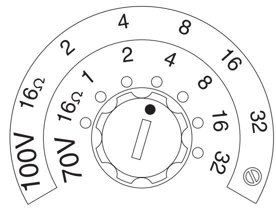
If the connections to one speaker in a system are reversed from the others, that speaker's movement will be out of sync with the other speakers. This will result in a loss of low frequency response and will effect the overall performance of the system.

Terminal Covers

- The two terminal cover halves are attached to the back of the speaker using 4 screws. It is important that all 4 screws be used to mount the covers.
- A slot between the two halves allows the wire to exit the speaker while protecting the connections. The cover's eyelets can be used to anchor the wire using a wire tie if desired.
- If local codes require the use of a conduit for connections or strain relief of the connections, a knockout can be removed and a proper fitting installed for the particular situation.
- Eyelets are provided on the terminal covers to provide a means of securing the speaker to the structure when necessary. It is important that all 4 terminal cover attaching screws be installed in this application.

Selecting Power Levels

The front-mounted selector switch is used to set the appropriate power level or impedance for your system. Using a small, flat-blade screwdriver, turn the knob until the slot points to the power level you require.



70V/100V Systems

Both power setting scales for 70V and 100V systems are labeled on the speakers. On the 100V scale, the last position clockwise is marked with a ⊘ symbol. Do not use this position in 100V systems.

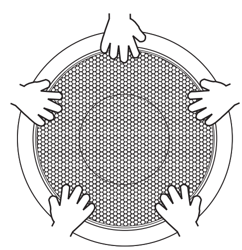
16Ω Systems

The fully counterclockwise position of the setting switch is the 16-ohm position. This setting is suitable for use with low-impedance amplifiers that typically support 4- or 8-ohm speakers. The speaker's higher, 16-ohm impedance makes it easier to combine multiple speakers into series-parallel networks while keeping the total system impedance at a level suitable for low-impedance amplifiers.

Speaker Grille Installation & Removal

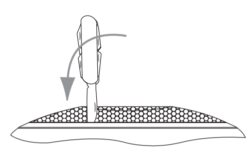
Installation

The speaker grille fits tightly! Push the speaker grille in until it can go no further. Then, slap around the edge of the grille to seat the grille. The grille is properly seated when it is flush with the edge of the bezel.



Removal

Insert a pocketknife blade between the grille and the bezel about a ¼" deep and then gently pry the grille upwards. Do this in multiple places around the circumference of the grille to free the grille.



Specifications

SPECIFICATIONS	OCS1
Frequency Response (-10 dB)*	60 Hz to 19 kHz
LF Driver	6-½" MDT Metal-Alloy Cone (MLS Voice Coil Centering System)
HF Driver	20 mm (¾") Polycarbonate Dome
Sensitivity (1W/1M)	89.5 dBspl (Average 100 Hz - 10 kHz)
Usable Coverage Angle	120°
Impedance Ratings	Low (16 ohms) / High (70V/100V)
Power Input (Max.)	100W @ 16 ohms; 32W @ 70V/100V
Power Settings (in watts)†	70V: 32, 16, 8, 4, 2, 1W & 16 ohms 100V: 32, 16, 8, 4, 2W & 16 ohms
Baffle Material	Fire-rated (94VO) ABS
Back Can Material	Heavy-Gauge Plated Steel
Terminations	4 Terminal Snap-Lock Input Connector
Product Weight	10 lb.
Speaker Dimensions	12-5/16" dia. x 12" D
Vertical Clearance Requirement	Minimum 11" (From front of Mounting Surface)
Included Accessories	Input Terminal Cover (2 Halves); (4) Screws; (1) Snap-Lock Input Connector
Optional Accessories	Tile Bridge Support Ring (TBCR)
Baffle Ring Finish & Color	Textured White
Listings	CSA/UL Listed

*Half-Space Response, 16-ohm input

† Front panel, switch-selected.

Accessories

TBCR (Tile Bridge Support Ring)

The TBCR is a combination tile bridge and support ring that assists in securing the OCS1 and in distributing the weight of the OCS1 in various types of installations.

CK10 (Cable Kit, 10')

The CK10 is a 10-foot cable with one looped end and an adjustable cable clamp. It is suitable for use as a safety cable. The CK10 is available in black, white, or silver.

Limited Warranty

The Orbit Ceiling Speaker, model OCS1, is warranted to be free from defects in material or workmanship for five (5) years from the date of sale to the original purchaser. Any part of the product covered by this warranty that, with normal installation and use, becomes defective will be repaired or replaced by Bogen, at our option, provided the product is shipped insured and prepaid to: Bogen Factory Service Department, 50 Spring Street, Ramsey, NJ 07446, USA. The product will be returned to you freight prepaid. This warranty does not extend to any of our products that have been subjected to abuse, misuse, improper storage, neglect, accident, improper installation or have been modified or repaired or altered in any manner whatsoever, or where the serial number or date code has been removed or defaced.

THE FOREGOING LIMITED WARRANTY IS BOGEN'S SOLE AND EXCLUSIVE WARRANTY AND THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY. BOGEN MAKES NO OTHER WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED AND EXCLUDED TO THE MAXIMUM EXTENT ALLOWABLE BY LAW. Bogen's liability arising out of the manufacture, sale or supplying of products or their use or disposition, whether based upon warranty, contract, tort or otherwise, shall be limited to the price of the product. In no event shall Bogen be liable for special, incidental or consequential damages (including, but not limited to, loss of profits, loss of data or loss of use damages) arising out of the manufacture, sale or supplying of products, even if Bogen has been advised of the possibility of such damages or losses. Some States do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from State to State.

Products that are out of warranty will also be repaired by the Bogen Factory Service Department -- same address as above or call 201-934-8500. The parts and labor involved in these repairs are warranted for 90 days when repaired by the Bogen Factory Service Department. All shipping charges in addition to parts and labor charges will be at the owner's expense. All returns require a Return Authorization number.

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